CLAIMS

What is claimed is:

1. (currently amended) An apparatus for use in a borehole in an earth formation comprising:

(a) a conducting tubular, said conducting tubular having a damping portion for ~~interrupting~~ reducing a flow of eddy currents;

(b) ~~a transmitter~~ at least one transmitter ~~positioned on a first side of said damping portion~~ on said conducting tubular ~~for propagating~~ which propagates an electromagnetic field in the earth formation;

(c) ~~a receiver~~ at least one receiver ~~positioned on a second side opposite said first side of said damping portion axially separated from said transmitter for receiving~~ on said conducting tubular which receives a temporal signal resulting from interaction of said electromagnetic field with said earth formation; and

(d) a processor for determining from said temporal signal a resistivity of said earth formation.

2. (currently amended) The apparatus of claim 1, wherein said damping portion further comprises at least one cut in said damping portion of said conducting tubular.

3. (original) The apparatus of claim 2, wherein a non-conductive material is disposed within said cut.

4. (original) The apparatus of claim 1, wherein said damping portion further comprises

(i) a first segment having a cut, and

(ii) a second segment with non-conductive material positioned on an outer face of said segment.

5. (original) The apparatus of claim 1, wherein said damping portion further comprises a segment of pipe with a non-conductive material positioned on an outer face of said segment.

6. (currently amended) The apparatus of claim 1 wherein said ~~non-conductive material~~ damping portion comprises a ferrite.

7. (currently amended) The apparatus of claim 1 wherein said ~~non-conductive material~~ damping portion comprises a material with low magnetostriction.

8. (currently amended) The apparatus of claim 1, wherein said at least one transmitter further comprises at least one coil oriented so as to induce a magnetic moment in one of (i) a longitudinal parallel to an axis of said tubular, and, (ii) a direction inclined to said longitudinal axis.

9. (currently amended) The apparatus of claim 1, wherein said at least one receiver further comprises at least one coil having an orientation selected from (i) parallel to an axis of said tubular, and, (ii) inclined to an axis of said tubular.

10. (currently amended) The apparatus of claim 2 wherein said cut ~~is~~ comprises a longitudinal cut.

11. (currently amended) The apparatus of claim 2 wherein said cut ~~is~~ comprises a transverse cut.

12. (original) The apparatus of claim 1 further comprising a device for extending said borehole.

13. (original) The apparatus of claim 1 wherein said processor further determines a distance to a bed boundary in said earth formation.

14. (currently amended) A method of drilling an earth formation:

(a) conveying a bottom hole assembly (BHA) into said earth formation, said BHA including a tubular having a damping portion for ~~interrupting~~ reducing a flow of eddy currents;

(b) using ~~a transmitter positioned on a first side of said damping portion~~ at least one transmitter on said tubular for producing an electromagnetic field in the earth formation;

(c) using at least one receiver on said tubular ~~a receiver positioned on a second side opposite said first side of said damping portion axially separated from said transmitter~~ for receiving a temporal signal resulting from interaction of said first signal with said earth formation; and

(d) determining from said temporal signal said resistivity of said earth formation.

15. (original) The method of claim 14, wherein said damping portion further comprises at least one cut.

16. (original) The method of claim 15, wherein a non-conductive material is disposed within said cut.

17. (original) The method of claim 14, wherein said damping portion further comprises

(i) a first segment having a cut, and

(ii) a second segment with non-conductive material positioned on an outer face of said segment.

18. (original) The method of claim 14, wherein said damping portion further comprises a segment of pipe with a non-conductive material positioned on an outer face of said segment.

19. (original) The method of claim 18 further comprising using a ferrite for said non-conductive material.

20. (original) The method of claim 18 further comprising using a material with low magnetostriction for said non-conductive material.

21. (currently amended) The method of claim 14, wherein said at least one transmitter further comprises at least one coil oriented so as to induce a magnetic moment in one of (i) a longitudinal parallel to an axis of said tubular, and, (ii) a direction inclined to said longitudinal axis.

22. (currently amended) The method of claim 14, wherein said at least one receiver further comprises at least one coil having an orientation selected from (i) parallel to an axis of said tubular, and, (ii) inclined to an axis of said tubular.

23. (currently amended) The method of claim 15 wherein said cut ~~is~~ comprises a longitudinal cut.

24. (currently amended) The method of claim 15 wherein said cut ~~is~~ comprises a transverse cut.

25. (original) The method of claim 14 further comprising using a device on said BHA for extending said borehole.

26. (original) The method of claim 14 further comprising determining a distance to an interface in said earth formation.

27. (original) The method of claim 25 wherein (a) – (d) are carried out during continuing rotation of said BHA.

28. (original) The method of claim 26 further comprising using said determined distance for controlling a drilling depth of said BHA.

29. (original) The method of claim 26 wherein said interface comprises a bed boundary.

30. (original) The method of claim 26 wherein said interface comprises a fluid interface.

31. (new) The apparatus of claim 1 wherein said at least one transmitter and said at least one receiver are positioned on said conducting tubular on opposite sides of said damping portion.

32. (new) The method of claim 14 further comprising positioning said at least one transmitter and said at least one receiver on opposite sides of said damping portion.

4